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Natural museums of Ukrainian universities (XIX - early XX centuries)

Abstract. *One of the most important tasks of the modern history of Biology is the study of natural museums work at universities, their influence on the development of world science and their importance in the process of training the relevant specialists. One of the tasks is to study the role of the personalities of prominent scholars who have made a significant contribution to the formation and development of natural science. The article is devoted to the analysis of the formation, development, and work of the university natural museums of Ukraine, the creation of collections, systematization of the collected material, equipment of specialized premises and buildings. On the basis of the analyzed sources, the work of university natural museums, the state of collections, their quantity, filling, and cost are highlighted. The names of scholars of museums, patrons who donated collections and people who sold their own collections to natural museums are given. The article reveals a rather long history of universities in Ukraine. The oldest of them, Lviv University, was created in 1661 on the basis of the Jesuit College. A number of universities appear in the nineteenth century. In 1805 Kharkiv University was opened, and then in 1834 Kyiv University. Later, in 1865, the Novorosiysk University was founded in Odesa on the basis of the Rishelie Lyceum; in 1875 the Chernivtsi University was opened on the basis of the seminary. Together with universities, natural museums are created, which were becoming centers of knowledge and research. Universities opened geological, mineralogical, zoological, botanical, paleontological museums with appropriate collections. During the writing of the article, the materials from reports on the state and work of Kharkiv, Novorosiysk, Kyiv and Lviv universities were used. The functions of museums at universities are considered. This is, first of all, the identification and selection of materials for collections, the study, systematization, organization of the registration and storage of museum collections and as a result the exhibition. The role of the use of museum collections for the training and education of future specialists is also considered. Not the last role is assigned to university museums as popularizers of a positive image of an educational institution, and hence prospective recruitment of a new generation of students. It can be said with certainty that the natural museums of Ukrainian universities of the 19th and early 20th*



centuries were advanced and in no way inferior to the university museums of Europe concerning the organization, collection, systematization and conducting of scientific research.

Keywords: *mineralogy; geology; zoology; botany; paleontology; museum collections*

Introduction

Approval of industrial production has given a powerful impetus to the development of science, in particular, technical and natural sciences. The need for raw materials and energy sources led to the study of the earth's subsoil, consequently, the demand for raw materials for processing capacity, resulted in the emergence of new varieties of plants and animals. Under these conditions, universities became centers that aimed at studying on a level with the history, culture, and nature of the region. Along with the teaching and research work, they concentrate the collecting activities, which are due to the appearance of the museum of natural history that usually begin to occur almost simultaneously with the establishment of universities.

The purpose of this article is to highlight the main stages of the formation and development of natural museums at Kharkiv, Novorosiysk, Kyiv and Lviv universities.

Research methods

During the preparation of this article, a historical method was used in the context of considering the stages of formation and evaluation of the results of the activity of natural museums of Ukrainian universities of the 19th and early 20th centuries. The historiographical analysis allowed to systematize and critically evaluate the used sources, to highlight the main thing in the study of the topic, to determine the directions of research of scientists and museum staff. Also, the problem-chronological method was used to dismember the topic of the article into several rather narrow problems, each of which is considered in chronological sequence. In addition, a biographical method is used, according to which the scientist-researcher is endowed with living feelings, emotions and considered as a distinguished person in science. There are several such researchers for consideration.

Results and Discussion

In 1807, shortly after the opening of the Kharkiv University, two large collections were purchased at the mediation of the first trustee S. Potockyi from Kharkiv Academic District of Count, which formed the basis of the oldest mineralogical museum in Ukraine. The first of them – the collection of Professor Andre, which he had been collecting for forty years – cost 8000 francs and accounted for more than 5000 mineralogy from various deposits in Western Europe, in particular, quartz minerals, zeolites, and a large number of fossils. The second one - the Chetti collection – consisted of 520 minerals, including pyroxenes, feldspars, and others, and was acquired for 1800 francs (Logvinenko, 1955, pp. 35-36). In the same

year, the Chetti Collection, which includes 100 coral, 36 sea urchins, 18 sea stars, 2623 turtles, 235 butterflies, 540 beetles and 127 scarlet birds, is purchased for the foundation of a zoological museum (Osipov & Bagaley (Eds.), 1908, pp. 329).

As for the museums of the Novorosiysk University, some of them were based on the museums of the Rishelie Lyceum, or their individual collections. Thus, on the basis of the natural science cabinet of the lyceum in 1865 a zoological museum was created, one of the organizers of which was Professor I. A. Marcusen. The museum obtained, in particular, a collection of Professor of Lyceum O. Nordman, a famous naturalist, a researcher of the fauna of the Black Sea and the Black Sea area. In the lyceum, professors Hassagen, Baikov, and Markusen gathered a collection of minerals, rocks and ores, which at the time of the transfer to the university totaled 2195 samples (Yurzhenko (Eds.), 1968, p. 206). The mineralogical museum received 6764 mineral names with the cost of 3084 rubles 19 kopecks from the Lyceum (Markevich, 1890, p. 635). A large number of exhibits came from the Lyceum and the Botanical Museum.

In the middle of the nineteenth century, the museums of Lviv University are founded. Thus, in the 1852-1853 academic year, a mineralogical museum was created where mineralogical and geological materials were stored. Its founder and the first manager was a professor of natural science, a botanist doctor G. Lobazhevskiyi, who simultaneously taught Mineralogy and Petrography. In accordance with the specialty of its founder, the museum in its early years was mineralogical and botanical. A little later, in 1884, a zoological museum was created, the founder of which was the famous ichthyologist, ornithologist, and geographer B. Dybowskyi. Initially, the museum contained about a thousand specimens of exhibits, among which there were no collections of nests and eggs of birds, skeletons and horns of animals, other groups of animals were not represented at all.

In the 1875–1876 academic year, the first after the opening of the Chernivtsi University, a geological-geographical museum was created in it, and a little later, in 1877, a zoological museum was opened.

Professors of universities have played a significant role in the life of museums. Often they were the founders and initiators of the creation of museums, in some cases museums were equipped by their cost. Thus, the Museum of Zoology of Novorosiysk University was equipped at the expense of the prominent biologist, the future Nobel Prize laureate (1908) I. I. Mechnikov, who for some time was its manager. Professors made a significant contribution to both the equipment of museums and the enrichment of their collections. Thus, the mineralogical museum of Kharkiv University for 26 years was headed by the well-known hydrogeologist Professor N. D. Borisyak, at which the admission to the museum significantly expanded. For 36 years the museum was headed by crystallographist and petrographist Professor O. S. Brio. As a result of their work, the number of samples of minerals in the collection doubled, and in 1905 they numbered more than 15 thousand (Logvinenko, 1955, p. 37). Both scientists paid attention to the availability of equipment: N. D. Borisyak bought, among other things, a microscope and a spectroscope,

O. S. Brio purchased a device for the determination of minerals, electromagnetic apparatus, etc. The Professor of the University, a well-known geologist O. V. Gurov enlarged the collection of the geological museum by bringing a gift as a collection consisting of 4586 numbers of rocks and fossils, taken in the south of Russia (Osipov & Bagaley (Eds.), 1908, p. 318). One of the managers of the zoological museum of Kharkiv University was Professor O. M. Nikolskyi. It was he who set up the museum collection of the vertebrates of the Russian Empire and also presented the collection collected by the museum to the stuffed birds.

Already in the first years of the existence of the zoological museum of the Novorosiysk University, its work was led by professors I. I. Mechnikov, O. O. Kovalevskyi, V. V. Zelenskyi. Mechnikov and Kovalevskyi handed over to the museum collection material of marine invertebrates for the replenishment of the collections, which they brought from abroad. Kovalevsky personally produced a number of comparative-embryological preparations. As for Zelenskyi, it was under his leadership that the museum, in the exposition of which represented almost all the existing systematic groups of the world's fauna, became one of the best zoological museums of the former Russian Empire. Exhibits collected by O. O. Kovalevskyi, enriched the collection of another zoological museum of Kyiv University. In particular, he handed over to it a large collection of invertebrates of the Black Sea, numbering more than 2500 specimens.

The mineralogical museum of the University of Kyiv is associated with the name of Professor K. M. Feofylactov. Studying the geology of Ukraine, he significantly replenished the mineralogical and paleontological collections of the museum with samples, which he collected annually, mainly in the vicinity of Kyiv. He also formed a significant collection of post-tetra deposits of Ukraine from numerous drill boreholes. A lot of efforts were given to make geological collections of this museum by P. A. Tutkovskyi, whom V. I. Vernadskyi considered as the best connoisseur of the inorganic nature of Ukraine. During scientific expeditions to Ukraine, he collected a collection of rocks and fossils, the most interesting of which was the labradorite breed from the village Kamyanyi Brid, crystalline limestone from village Koziivka and some sandstones (Onoprienko, 1987, p. 24). K. F. Kessler played a significant role in forming the collections of the zoological museum of Kyiv University. Kessler is the author of the first major work devoted to the fauna of Ukraine. For several years he has researched fauna of the Kyiv province and other regions of Ukraine. All materials collected by him came to the museum, which made him the owner of one of the most significant collections of local fauna.

The exposition of the zoological museum of Lviv University was greatly enriched by its founder B. Dybowskyi. For participating in the Polish uprising in 1863, he was sent to Siberia, where he began the study of the fauna of Lake Baikal and Baikal area. After the exile, he organizes an expedition to the Far East, during which he studies the fauna of Kamchatka, the Amur basin and the coast of the Sea of Japan. Gathered collections subsequently entered the museum's exposition. Among them are mollusks of Lake Baikal, Kamchatka, birds of Eastern Siberia, insects,

vertebrates, crustaceans of Lake Baikal and its surroundings. To the mineralogical museum, an outstanding mineralogist and petrographist, the founder of modern petrography, F. Tsirkel transmitted the collection of local sedimentary rocks, the complex of rocks of the Carpathians, and the well-known specialist in the geology of oil R. Zuber gave his collection of corals.

University staff also made efforts to enrich museum collections, in particular, the mineralogical museum of Kharkiv University was replenished with collections compiled by the staff of the Department of Mineralogy. Ornithologist, entomologist, and taxidermist I. M. Vidgelm, an employee of the Zoological Museum of the Novorossiysk University from the day its foundation, for decades, he made his own stuffed birds for it and entomologic preparations. The mineralogical museum of the Novorossiysk University in 1903 was presented a collection of Ural minerals in the amount of 20 pieces by a laboratory assistant Novitskyi, it included gold, beryl, tourmaline, rutile (Imperial Novorossiysk University, 1904, p. 38). Employees of the Department of Paleontology V. D. Laskarov and M. I. Andrusov also handed over to the museum the collections gathered by them.

The contribution to the development of university museums were also made by scientific societies. Thus, the Society of Naturalists at the Kharkiv University released funds for geological excursions, during which collections were gathered, which was completely received by the geological museum.

A significant source of replenishment of museum collections was the acquisition of collections from firms and individuals. Thus, preparations for the zoological museum of Novorosiysk University were mainly purchased abroad: in Paris, Hamburg, Amsterdam, and other cities. Only in 1876-1878 valuable collections of exotic birds, among which 120 species from the island of Java and fish were purchased (Yurzhenko (Eds.), 1968, p. 157). The Mineralogical Museum of Kharkiv University annually bought samples of minerals, and only in 1880, it came from Kranz collection of minerals, which accounted for 1002 shrubs (Logvinenko, 1955, p. 37). In 1853, the same museum bought a platinum nugget, a crystal of gold and gold-bearing quartz from a pharmacist Davydenko, and in 1858 from a mining engineer Lysenko with a collection of minerals from 789 shrubs (Osipov & Bagaley (Eds.), 1908, p. 299). In 1864, when the mineralogical museum of Lviv University received funds for its development, a collection of minerals from 2800 samples was purchased (Lazarenko & Korobtsova, 1953, p. 328). The museum also replenished its collections through orders from firms of Schuhard, Egerte and others.

Much of the museum's exposure belongs to the most diverse donations from individuals. Thus, in the mineralogical museum of the Kharkiv University in 1826 a collection of barons Marshal-Bybershteyn came into existence consisting of 100 mines of the Caucasus (Osipov & Bagaley (Eds.), 1908, p. 298). Mineralogical Museum of Novorossiysk University was presented a beautiful collection of cinnamon samples by Mining Engineer P. S. Sergeyev.

Having accumulated exhibits, museums expanded their expositions and shared a number of separate museums. From mineralogical museums, there were museums of

geology. At the Kharkiv University this happened in 1866, in Novorosiysk – in 1872, in Lviv – in 1905. At the same time, newly-created museums were allocated significant collections. So, the Kharkiv Geological Museum received petrographical and paleontological collections, which included: a collection of coal rocks and Jurassic fossils in the number of 102 rooms, a collection of Donbas rocks with 158 units, a collection of rocks and fossils of the mostly tertiary system of southern Russia with 208 units (Osipov & Bagaley (Eds.), 1908, p. 310). Lviv Geological Museum also received from mineralogical the geological and paleontological collections.

As the museums developed, the rooms they occupied became tight, or simply were not adapted for museum needs, and universities were trying to solve this problem. The first premises received by the Geological Museum of Kharkiv University were an old one-storey building, dark, semi-destroyed, with two rooms, the largest of which was the museum's collections. Over time, due to the lack of space, the museum actually turned into a warehouse. To ensure the normal conditions for its existence, in 1899, a separate two-story house was built for it (Buzeskul, 1900, p. 38-39). Already next year the museum was located in it, occupying the first floor, and the second placed the audience and the laboratory.

In 1892 the mineralogical museum of Lviv University, which since its foundation was located in the building on Mykolayi Street, was transferred to a newly constructed building at the following address of Dlugosha street, 6, where it occupied seven rooms on the ground floor. In 1906, after the allocation of a geological museum, it was given room in the house on the Mykolayi Street, where geological and paleontological collections were transferred. Later, in 1913, the museum moved to the new building of the university at the address Dlugosha Street, 8.

The collaborative work of colleagues, university students and amateurs has led museums to accumulate valuable collections of value. Only at the University of Novorosiysk Mineralogical Museum until 1902 a collection of minerals from 1866 units for the cost of 9776 rubles 46 kopecks was gathered, and in the geological museum at the beginning of the next year, 1903, there were collections of rocks and fossils on 9269 rubles 5 kopecks (Imperial Novorossiysk University, 1904, p.28). It did not concede to the Kharkiv University. Already in the beginning of 1907, in its zoological museum, 7826 exhibit items were stored in 55126 copies for a total of 41634 rubles 92 kopecks, mineralogical – 18947 items in 18756 copies to 32291 rubles 57 kopecks, in geological – 9570 items for 25915 rubles 8 kopecks (Imperial Kharkov University, 1908, p. 75-76).

Conclusions

Natural museums of Ukraine of the 19th and early 20th centuries had numerous, rare collections in their repositories. All of these museum collections were not deadly. First of all, they served the students' training. But their role was beyond the purely educational and auxiliary, they also served the specialists who could obtain the necessary data from them. In particular, the Museum of Geology at Kharkiv

University attracted the attention of mining figures, who could get information about it in relation to local geological conditions of minerals. University museums have also been opened to a wide range of visitors. This was done when the collections were of interest to the general public, and when the conditions for storing the exhibits allowed to open the exposition for review. So, when the Zoological Museum of the Novorosiysk University was transferred from an awkward room in the main building on Dvorianska Street in more adapted premises on Preobrazhenska Street, it became accessible to visitors. Although the size of the collections of university museums, as well as the scientific value of their exhibits, were different, all the museums, in their strength, served to improve the training of specialists. They became centers of attraction for both prominent scholars and young researchers and turned into original scientific centers that contributed to raising the scientific and cultural level of both students and the general public, to the knowledge of nature as their region, and around the world.

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Природничі музеї університетів України (XIX – початок XX ст.)

Анотація. Одним із актуальних завдань сучасної історії біології є вивчення діяльності природничих музеїв при університетах, їх вплив на розвиток світової науки та їх значення в процесі підготовки відповідних спеціалістів. Також одним із завдань є вивчення ролі персоналій видатних вчених, що зробили вагомий внесок в становлення та розвиток природничої науки. Стаття присвячена аналізу становлення, розвитку та діяльності університетських природничих музеїв України, створення колекцій, систематизації зібраного матеріалу, обладнання спеціалізованих приміщень та будівель. На основі проаналізованих джерел висвітлено роботу університетських природничих музеїв, стан колекцій, їх кількість, наповнюваність та вартість. Надаються імена наукових співробітників музеїв, меценатів, які дарували колекції та людей, які продавали свої власні колекції природничим музеям. В статті розкрито досить довгу історію університетів на території України. Найстаріший з них, Львівський, створено у 1661 році на базі єзуїтської колегії. Цілий ряд університетів з'являється у XIX столітті. У 1805 році відкрито Харківський, а в 1834 році – Київський університети. Пізніше, у 1865 році в Одесі на базі Рішельєвського ліцею створено Новоросійський університет, у 1875 році на базі духовної семінарії відкривається Чернівецький університет. Разом з університетами створюються природничі музеї, які стають осередками знань та наукових досліджень. При університетах відкриваються геологічні, мінералогічні,

зоологічні, ботанічні, палеонтологічні музеї з відповідними колекціями. Під час написання статті були використані матеріали звітів про стан та діяльність Харківського, Новоросійського, Київського та Львівського університетів. Розглянуто функції музеїв при університетах. Це, насамперед, виявлення і відбір матеріалів для колекцій, вивчення, систематизація, організація обліку та зберігання музейних колекцій і як підсумок – експонування. А також розглянута роль використання музейних колекцій для підготовки і виховання майбутніх фахівців. Не остання роль відводиться університетським музеям, як популяризаторам позитивного іміджу навчального закладу, а значить і перспективного набору нового покоління студентів. З впевненістю можна сказати, що природничі музеї університетів України XIX – початку XX століть були передовими і не поступалися університетським музеям Європи стосовно організації, збирання колекцій, їх систематизації та проведення наукових досліджень.

Ключові слова: мінералогія; геологія; зоологія; ботаніка; палеонтологія; музейні колекції

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Музеи естественных наук университетов Украины (XIX - начало XX вв.)

Аннотація. Одной из актуальных задач современной истории биологии является изучение деятельности музеев естественных наук при университетах, их влияние на развитие мировой науки и их значение в процессе подготовки соответствующих специалистов. Также одной из задач является изучение роли персоналий выдающихся ученых, внесших весомый вклад в становление и развитие естественных наук. Статья посвящена анализу становления, развития и деятельности музеев естественных наук университетов Украины, созданию коллекций, систематизации собранного материала, оборудованию специализированных помещений и зданий. На основе проанализированных источников освещается работа университетских музеев естественных наук, состояние коллекций, их количество, наполняемость и стоимость. Предоставляются имена научных сотрудников музеев, меценатов, которые дарили коллекции и людей, которые продавали свои собственные коллекции музеям естественных наук. В статье раскрыто достаточно длинную историю университетов на территории Украины. Самый старый из них, Львовский, основан в 1661 году на базе иезуитской коллегии. Целый ряд университетов появляется в XIX веке. В 1805 году открывается Харьковский, а в 1834 году – Киевский университеты. Позже, в 1865 году в Одессе, на базе

Ришельевського лиця создан Новоросійський університет, в 1875 году на базе духовної семінарії відкривається Черновицький університет. Вмєсте с університетами создаються музеї естественних наук, которые становяцца центрами знаній и научных исследований. При університетах відкриваються геологіческие, мінералогіческие, зоологіческие, ботанические, палеонтологіческие музеї с соответствующими колекціями. При написанні статті були використані матеріали отчетов о состояннїи и деятельности Харьковского, Новоросійского, Киевского и Львовского університетов. Рассмотрены функции музеев при університетах. Это, прежде всего, выявление и отбор материалов для колекцій, изучение, систематизация, организация учета и хранения музейных колекцій и как итог – экспонирование. А также рассмотрена роль использования музейных колекцій для подготовки и воспитания будущих специалистов. Не последняя роль отводится університетским музеям, как популяризаторам положительного имиджа учебного заведения, а значит и перспективного набора нового поколения студентов. С уверенностью можно сказать, что музеї естественных наук університетов Украины XIX-начала XX веков были передовыми и не уступали університетским музеям Европы по организации, сбору колекцій, их систематизации и проведения научных исследований.

Ключевые слова: мінералогія; геологія; зоологія; ботаніка; палеонтологія; музейні колекції

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